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2017

## Nebraska Summary: S1141 John Deere 6120R

Nebraska Tractor Test Laboratory

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# SUMMARY OF OECD TEST 3085 - NEBRASKA SUMMARY 1141

## JOHN DEERE 6120R POWRQUAD-PLUS DIESEL

### 24 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>						
<b>Rated Engine Speed—(PTO speed—1070 rpm)</b>						
99.5 (74.2)	2100	6.26 (23.69)	0.441 (0.268)	15.89 (3.13)	0.13 (0.48)	Fuel used during the active exhaust regeneration - 0.7 gal (2.6 l) (see Note 1, p.2)
<b>Standard Power Take-off Speed (1000 rpm)</b>						
112.6 (84.0)	1962	6.59 (24.97)	0.409 (0.249)	17.08 (3.37)	0.16 (0.60)	
<b>Maximum Power (1 hour)</b>						
113.2 (84.4)	1900	6.55 (24.79)	0.405 (0.246)	17.28 (3.40)	0.16 (0.60)	

#### VARYING POWER AND FUEL CONSUMPTION

99.5 (74.2)	2100	6.26 (23.69)	0.441 (0.268)	15.89 (3.13)	0.13 (0.48)	Air temperature
86.9 (64.8)	2152	5.88 (22.22)	0.473 (0.288)	14.79 (2.91)	0.10 (0.39)	70°F (21°C)
65.8 (49.1)	2177	5.12 (19.40)	0.545 (0.331)	12.84 (2.53)	0.08 (0.29)	Relative humidity
44.5 (33.2)	2209	4.23 (16.00)	0.664 (0.404)	10.53 (2.08)	0.06 (0.22)	48%
22.5 (16.8)	2231	3.21 (12.17)	0.999 (0.608)	7.01 (1.38)	0.05 (0.17)	Barometer
--	2251	2.11 (8.00)	--	--	0.05 (0.20)	29.9" Hg (101.1 kPa)

Maximum torque - 364 lb.-ft. (494 Nm) at 1500 rpm

Maximum torque rise - 46.6%

Torque rise at 1700 engine rpm - 42%

Power increase at 1900 engine rpm - 13.8%

#### DRAWBAR PERFORMANCE UNBALLASTED - FRONT DRIVE ENGAGED FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inches Hg (kPa)
<b>Power at Rated Engine Speed—8th (C1) Gear</b>										
90.3 (67.3)	7100 (31.59)	4.77 (7.67)	2101	3.1	0.490 (0.298)	14.31 (2.82)	0.015 (0.009)	169 (76)	52 (11)	29.7 (100.7)
<b>75% of Pull at Rated Engine Speed—8th (C1) Gear</b>										
70.9 (52.9)	5315 (23.65)	5.00 (8.05)	2186	2.4	0.573 (0.349)	12.22 (2.41)	0.016 (0.010)	165 (74)	52 (11)	29.7 (100.7)
<b>50% of Pull at Rated Engine Speed—8th (C1) Gear</b>										
47.6 (35.5)	3505 (15.59)	5.09 (8.19)	2203	1.5	0.711 (0.432)	9.85 (1.94)	0.018 (0.011)	160 (71)	52 (11)	29.7 (100.7)
<b>75% of Pull at Reduced Engine Speed—10th (C2) Gear</b>										
70.7 (52.7)	5305 (23.60)	4.99 (8.03)	1810	2.3	0.484 (0.295)	14.47 (2.85)	0.015 (0.009)	162 (72)	52 (11)	29.7 (100.7)
<b>50% of Pull at Reduced Engine Speed—10th (C2) Gear</b>										
47.7 (35.6)	3520 (15.66)	5.09 (8.19)	1830	1.6	0.575 (0.350)	12.18 (2.40)	0.020 (0.012)	156 (69)	52 (11)	29.7 (100.7)

**Location of tests:** DLG e.V. Test Centre, Technology and Farm inputs, Max-Eyth-Weg 1, D-64823 Gross-Umstadt, Germany

**Dates of tests:** October to November, 2017

**Manufacturer:** John Deere GmbH & Co., KG Mannheim Germany

**CONSUMABLE Fluids:** Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8408 Fuel weight 7.01 lbs/gal (0.839 kg/l) Diesel Exhaust Fluid (DEF) 32% aqueous urea solution DEF weight 9.071 lbs/gal (1.087 kg/l) Oil SAE 10W-30 API service classification CJ-4 Transmission and hydraulic lubricant John Deere Hy-Gard fluid Front axle lubricant John Deere Hy-Gard fluid

**ENGINE:** Make John Deere Diesel Type four cylinder vertical with two turbochargers, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** \*CD4045U035515\* Crankshaft lengthwise Rated engine speed 2100 Bore and stroke 4.19" x 5.00" (106.5 mm x 127.0 mm) Compression ratio 17.2 to 1 Displacement 276 cu in (4525 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements and aspirator Oil filter one full flow cartridge Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil Fuel filter one paper element and prestrainer Fuel cooler radiator for pump return fuel Exhaust DOC (diesel oxidation catalyst)/DPF (diesel particulate filter) System and SCR (selective catalyst reduction) with a vertical muffler Cooling medium temperature control thermostat and variable speed fan

**CHASSIS:** Type front wheel assist **Serial No.** \*1L06120RAHK882387\* Tread width rear 63.5 (1612 mm) to 75.4" (1916 mm) front 63.5" (1612 mm) to 75.4" (1916 mm) Wheelbase 101.6" (2580 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial (4) range operator controlled power shift Nominal travel speeds mph (km/h) first 1.22 (1.97) second 1.47 (2.37) third 1.76 (2.84) fourth 2.16 (3.48) fifth 2.99 (4.81) sixth 3.60 (5.79) seventh 4.31 (6.93) eighth 4.87 (7.84) ninth 5.28 (8.49) tenth 5.87 (9.44) eleventh 7.02 (11.30) twelfth 7.99 (12.86) thirteenth 8.61 (13.85) fourteenth 9.63 (15.49) fifteenth 11.53 (18.55) sixteenth 12.99 (20.90) seventeenth 14.12 (22.72) eighteenth 15.63 (25.16) nineteenth 17.53 (28.21) twentieth 18.73 (30.14) twenty-first 21.11 (33.97) twenty-second 22.94 (36.92) twenty-third 25.28 (40.69) twenty-fourth 30.97 (49.84)

## DRAWBAR PERFORMANCE

### UNBALLASTED - FRONT DRIVE ENGAGED - 1900 ENGINE RPM MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. <sup>2</sup> F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
5th (B1) Gear										
91.7 (68.4)	14030 (62.41)	2.45 (3.94)	2004	14.9	0.506 (0.308)	13.91 (2.74)	0.015 (0.009)	169 (76)	45 (7)	29.7 (100.6)
6th (B2) Gear										
100.6 (75.0)	12385 (55.09)	3.05 (4.90)	1898	7.4	0.454 (0.277)	15.48 (3.05)	0.012 (0.007)	169 (76)	45 (7)	29.7 (100.6)
7th (B3) Gear										
103.8 (77.4)	10435 (46.42)	3.73 (6.01)	1898	5.2	0.443 (0.270)	15.89 (3.13)	0.015 (0.009)	169 (76)	45 (7)	29.7 (100.7)
8th (C1) Gear										
102.2 (76.1)	8970 (39.91)	4.27 (6.86)	1900	4.3	0.449 (0.273)	15.68 (3.09)	0.016 (0.010)	176 (80)	54 (12)	29.4 (99.7)
9th (B4) Gear										
102.3 (76.3)	8285 (36.85)	4.63 (7.46)	1897	3.9	0.449 (0.273)	15.68 (3.09)	0.016 (0.010)	172 (78)	52 (11)	29.5 (99.8)
10th (C2) Gear										
102.7 (76.6)	7420 (33.00)	5.19 (8.36)	1903	3.3	0.447 (0.272)	15.74 (3.10)	0.013 (0.008)	176 (80)	52 (11)	29.4 (99.7)
11th (C3) Gear										
103.3 (77.0)	6175 (27.46)	6.27 (10.09)	1906	2.8	0.447 (0.272)	15.74 (3.10)	0.015 (0.009)	174 (79)	54 (12)	29.4 (99.7)
12th (D1) Gear										
102.2 (76.2)	5360 (23.85)	7.15 (11.50)	1900	2.2	0.450 (0.273)	15.65 (3.08)	0.016 (0.010)	174 (79)	52 (11)	29.4 (99.7)
13th (C4) Gear										
101.2 (75.5)	4930 (21.93)	7.70 (12.40)	1902	2.1	0.453 (0.275)	15.53 (3.06)	0.020 (0.012)	176 (80)	52 (11)	29.4 (99.7)
14th (D2) Gear										
101.5 (75.7)	4415 (19.65)	8.62 (13.87)	1896	1.9	0.453 (0.275)	15.53 (3.06)	0.012 (0.007)	172 (78)	52 (11)	29.4 (99.7)
*15th (D3) Gear										
106.7 (79.5)	3850 (17.12)	10.39 (16.73)	1902	1.6	0.453 (0.275)	15.53 (3.06)	0.013 (0.008)	174 (79)	52 (11)	29.4 (99.7)
*16th (E1) Gear										
111.7 (83.3)	3570 (15.88)	11.73 (18.87)	1904	1.5	0.456 (0.277)	15.43 (3.04)	0.013 (0.008)	174 (79)	52 (11)	29.4 (99.7)
*17th (D4) Gear										
111.3 (83.0)	3260 (14.51)	12.80 (20.59)	1909	1.4	0.457 (0.278)	15.38 (3.03)	0.018 (0.011)	172 (78)	50 (10)	29.4 (99.7)

\*Intelligent Power Management system activated

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 8th (C1) gear	68.0	69.0
Transport speed - no load - 24th (F4) gear		70.5
Bystander		--

Horizontal distances of drawbar hitch point behind rear wheel axis - 33.5 in (850 mm), 37.4 in (950 mm), 39.4 in (1000 mm)

## TIRES AND WEIGHT

**Rear Tires** - No., size, ply & psi (kPa)  
**Front Tires** - No., size, ply & psi (kPa)  
**Height of Drawbar**  
**Static Weight with operator** - Rear  
 - Front  
 - Total

## Tested Without Ballast

Two 460/85R34;\*\*\*;12(80)  
 Two 380/85R24;\*\*\*;12(80)  
 16.9 in (430 mm)  
 7275 lb (3300 kg)  
 5280 lb (2395 kg)  
 12555 lb (5695 kg)

reverse 1.27 (2.05), 1.53 (2.47), 1.84 (2.96), 2.26 (3.63), 3.12 (5.02), 3.75 (6.04), 4.49 (7.23), 5.08 (8.18), 5.51 (8.86), 6.12 (9.85), 7.33 (11.79), 8.34 (13.42), 8.98 (14.45), 10.04 (16.16), 12.02 (19.35), 13.55 (21.81), 14.80 (23.81), 16.32 (26.26), 18.29 (29.44), 19.55 (31.45), 22.03 (35.45), 23.94 (38.53), 26.38 (42.46), 32.32 (52.01) **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1967 engine rpm or 1000 rpm at 1962 engine rpm **Unladen tractor mass** 12390 lb (5620 kg)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**NOTE 1:** The manufacturer declares that the average time between active regenerations is 100 hours.

**NOTE 2:** This tractor has an engine control feature, I.P.M. (Intelligent Power Management) that allows the engine to run in a "boosted" mode, increased power level, at elevated drawbar travel speeds.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. The manufacturer's claim of 119 PTO Hp (89 kW), with I.P.M. activated was not verified. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **3085**, Nebraska Summary 1141, June 11, 2018.

Roger M. Hoy  
 Director

M.F. Kocher  
 J.D. Luck  
 P.J. Jasa  
 Board of Tractor Test Engineers

## HYDRAULIC PERFORMANCE WITH 45cc pump

CATEGORY:3N

Quick Attach: No

Lift cylinders:

2 x 65 mm

2 x 75 mm

Maximum force exerted through whole range: 5755 lbs (25.6 kN) 7575 lbs (33.7 kN)

i) Sustained pressure at compensator cutoff: 2975 psi (205 bar)

**two outlet sets combined**

ii) Pump delivery rate at minimum pressure: 32.2 GPM (122.0 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 28.4 GPM (107.4 l/min)

Delivery pressure: 2715 psi (187 bar)

Power: 45.1 HP (33.6 kW)

**single outlet set**

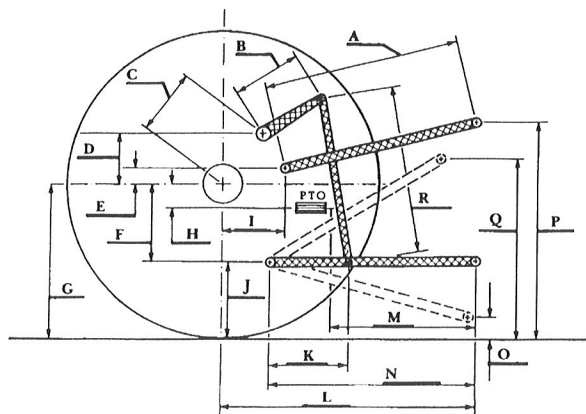
ii) Pump delivery rate at minimum pressure: 30.7 GPM (116.2 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 28.5 GPM (107.7 l/min)

Delivery pressure: 2320 psi (160 bar)

Power: 38.6 HP (28.8 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	28.7	730
B	15.4	390
C	21.7	552
D	20.7	525
E	12.6	320
F	8.8	224
G	30.5	775
H	4.3	110
I	16.8	427
J	21.7	551
K	22.0	560
L	45.3	1150
M	24.4	620
N	40.0	1015
O	9.1	230
P	48.7	1236
Q	39.1	992
R	33.5	850

## RECOMMENDED CITATION FORMAT:

NTTL.(2018). OECD tractor test 3085 for John Deere 6120R PowerQuad Plus Diesel.

Lincoln, NE:Nebraska Tractor Test Laboratory. Retrieved from <http://tractortestlab.unl.edu>